

Appl. No. 09/603,184  
Amdt. Dated January 9, 2006  
Reply to final Office Action of October 20, 2005

Attorney Docket No. 81784.0211  
Customer No.: 26021

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): A noise cancel circuit for removing noise components in an input audio signal, comprising:

an interpolation circuit for performing interpolation processing on said input audio signal,

an LPF for eliminating high frequency components of the input audio signal, an output of the LPF being provided to the interpolation circuit and the interpolation circuit performing an interpolation process on the output from the LPF, and

a noise detection circuit for detecting the noise portion of said input audio signal, wherein

the input audio signal has a frequency within the audio frequency band, and

the noise portion of said input audio signal is changed to replaced by an output signal from said interpolation circuit according to an output signal from said noise detection circuit, and

said LPF passes a main signal and eliminates sub-signals and pilot signals.

2. (Original): The noise cancel circuit defined in Claim 1, wherein said interpolation circuit executes spline interpolation.

Appl. No. 09/603,184

Attorney Docket No. 81784.0211

Amdt. Dated January 9, 2006

Customer No.: 26021

Reply to final Office Action of October 20, 2005

3. (Currently Amended): The noise cancel circuit defined in Claim 1, further comprising wherein:

~~a noise detection circuit for detecting the noise portion of said input audio signal, wherein~~

the noise portion of said input audio signal is interpolated by said interpolation circuit according to an output signal from said noise detection circuit.

4. (Previously Presented): The noise cancel circuit defined in Claim 3, further comprising:

a first delay circuit for delaying said input audio signal;

a selection circuit for selecting either the output signal from said interpolation circuit or the delayed input audio signal from said first delay circuit, wherein

said selection circuit is controlled according to the output signal from said noise detection circuit.

5. (Original): The noise cancel circuit defined in Claim 4, wherein said interpolation circuit performs interpolation processing and outputs an interpolation signal regardless of presence or absence of noise components.

6. (Previously Presented): The noise cancel circuit defined in Claim 5, further comprising:

a second delay circuit for delaying said interpolation signal from said interpolation circuit.

Appl. No. 09/603,184  
Amtd. Dated January 9, 2006  
Reply to final Office Action of October 20, 2005

Attorney Docket No. 81784.0211  
Customer No.: 26021

7. (Original): The noise cancel circuit defined in Claim 6, wherein said second delay circuit is disposed in a processing stage prior to said interpolation circuit.

8. (Previously Presented): The noise cancel circuit defined in Claim 6, wherein

a delay time of said first delay circuit is determined based on a sum of an interpolation processing time of said interpolation circuit and a delay time of said second delay circuit.

9. (Original): The noise cancel circuit defined in Claim 8, wherein the delay time of said second delay circuit corresponds to a difference obtained by subtracting the interpolation processing time of said interpolation circuit from a time delay between generation and detection of said pulse noise.

10. (Cancelled).

11. (Currently Amended): The noise cancel circuit defined in Claim 1, wherein

said input audio signal is an FM radio signal, and  
~~said LPF passes a main signal and eliminates sub-signals and pilot signals.~~

12. (Previously Presented): The noise cancel circuit defined in Claim 1, further comprising:

a timer controlling a timing of changing the noise portion of said input audio signal to the output signal from said interpolation circuit.

Appl. No. 09/603,184  
Amdt. Dated January 9, 2006  
Reply to final Office Action of October 20, 2005

Attorney Docket No. 81784.0211  
Customer No.: 26021

13. (Previously Presented): The noise cancel circuit defined in Claim 1, further comprising:

a switch for changing the noise portion of said input audio signal to the output signal from said interpolation circuit according to the output signal from said noise detection circuit.